

An MDRC Working Paper

Barriers to Employment for Out-of-School Youth
Evidence from a Sample of Recent CET Applicants

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Abstract

This paper examines employment and earnings over a four-year period for a group of disadvantaged out-of-school youth who entered the Evaluation of the Center for Employment Training (CET) Replication Sites between 1995 and 1999. It assesses the importance of three key factors as barriers to employment: lack of a high school diploma, having children, and having an arrest record. The findings show that dropouts worked less than high school graduates, largely because of greater employment instability among men and because of both instability and longer spells of joblessness among women. Female dropouts had especially low employment rates and wages, and the negative effects of dropping out occurred primarily among women with children. Male dropouts did as well as high school graduates in terms of wages, although their overall job quality remained lower. For women, the results show no negative effects on employment or wages of having children at study entry. Although not measuring the effects of new births, these results suggest that any effects of early childbearing may be short-lived. Finally, men with previous arrests worked less over the follow-up period than other men, owing entirely to longer spells of joblessness, and they earned substantially lower wages. The findings suggest that these men may have faced an increasingly difficult time finding jobs as the economy weakened.

Introduction

Young people who lack postsecondary education or vocational credentials face an uphill battle in the job market. Although youth benefited from the strong economy of the 1990s, they were the first to feel the brunt of recession. Between 2000 and 2001 — the first year into the recent economic downturn — the employment-to-population ratio for 16- to 24-year-olds fell by 2.7 percentage points, compared with 0.6 percentage point for adults age 25 or older.¹ By 2004, while the overall unemployment rate was 5.5 percent, the rate for 16- to 24-year-olds was 12.3 percent. Unemployment tends to be higher among out-of-school youth than enrolled youth, and it is much higher among those who lack a high school diploma or General Educational Development (GED) certificate.²

Even when young workers do find jobs, they can expect lower real earnings than were achieved in past decades. While the payoff to a college education is higher than ever, real earnings have fallen by 13 percent since 1979 for those with a high school diploma and by 27 percent for those without a diploma.³ The loss of well-paying manufacturing jobs, coupled with rising demand for more highly skilled workers, has narrowed the range of career paths available to less educated youth. High rates of youth unemployment are a concern, given that early problems in the labor market can have lasting effects.⁴

This paper uses a recent and unique data set to examine the employment experiences of out-of-school youth, with a particular focus on several factors that may serve as barriers to employment. Collected for the Evaluation of the Center for Employment Training (CET) Replication Sites, the data span the period from 1995 to 2004 and cover four years of employment for youth who were ages 16 to 22 when they agreed to participate in the evaluation. Half the youth were randomly assigned to the program group and were eligible to receive CET services, and half were assigned to a control group that was ineligible for CET for 24 months, but they could seek out other services on their own. CET is an intensive, short-term (typically six months or less) job training program designed to mirror the workplace. Because the sample consists of youth who voluntarily enrolled in the CET evaluation, it is likely to be a highly motivated subset of the broader population of disadvantaged youth. Although this may limit the extent to which the findings are generalizable, it also creates a unique opportunity to describe the experiences of a group of youth who are motivated to improve their job prospects.

¹Sum and Taggart (2001).

²U.S. Department of Labor, Bureau of Labor Statistics: <ftp://ftp.bls.gov/pub/suppl/empsit.cpseea16.txt>.

³Bureau of Labor Statistics: <http://www.bls.gov/opub/ted/2003/oct/wk3/art04.txt>.

⁴Neumark (2002).

The paper focuses on three factors that are thought to be barriers to employment: lack of a high school diploma or GED certificate, childbearing, and arrests. It first documents whether these factors are associated with lower employment rates and then whether the lower employment rates stem from more employment instability (a higher rate of losing jobs) or longer spells of nonemployment (a lower rate of finding jobs). The paper also examines each barrier's association with wages and job type. The final section tests in a multivariate model whether these associations remain after controlling for a range of individual and contextual characteristics.

This paper adds to the body of evidence on the effects of education level, childbearing, and arrest records on the employment experiences of disadvantaged youth, focusing on a more recent time period than previous research and on a group of potentially highly motivated youth. While the findings do not prove a causal link between each of these factors and employment outcomes, the associations that are documented point to groups of youth who may benefit from additional help in improving their early employment experiences.

Background on Youth Employment Barriers

The employment problems of disadvantaged youth can stem from a variety of factors. Limited education has consistently been found to be one of the most important factors. Those who drop out of school have lower employment rates than high school graduates and typically fare worse in slack labor markets.⁵ Female dropouts have especially poor employment outcomes.⁶ Holzer and Lalonde, for example, estimate employment and job transition models and find that the lower employment rates for dropouts are due to both higher employment instability and longer spells of nonemployment.⁷ Much of these employment differences by education level are due to differences in cognitive test scores. In addition, the negative effects for dropouts are larger for women and are concentrated among women who have children. This paper follows Holzer and Lalonde's method of estimating transition models, although it focuses on employment rather than jobs. In addition, the data cover a more recent period — from 1996 to 2003 — whereas their data are from the National Longitudinal Study of Youth (NLSY) and largely span the 1980s.

A significant amount of research has examined the effects of children on women's employment, although much of it focuses on all adults and married couples. Identifying the direction of causality has been difficult, but recent studies using instrumental variables and other

⁵Sum, Khatiwada, Pond, and Trub'skyy (2002); Holzer and Lalonde (1999); Lynch (1989). Youth employment rates have also been found to be strongly related to local economic conditions (Sum, Khatiwada, Pond, and Trub'skyy, 2002; Freeman and Rodgers, 1999; Lynch, 1989).

⁶Holzer and Lalonde (2000); Blau and Kahn (2000).

⁷Holzer and Lalonde (2000).

methods generally find that childbearing reduces women's employment and that the effects of childbearing are larger for less educated women.⁸ The effects of children on men's employment tend to be negligible or positive.⁹

Finally, involvement with the criminal justice system has also been found to reduce employment prospects for men. Findings from Freeman and Rodgers, for example, suggest that past criminal activity reduces employment outcomes, although the authors point out that the causality can run in both directions.¹⁰ Other evidence on the effects of criminal activity comes from employers; Holzer finds that employers are very reluctant to hire young men whom they suspect of having previous arrests or incarcerations.¹¹

The CET Replication Evaluation: Sample and Data Sources

Between 1995 and 1999, over 1,400 economically disadvantaged out-of-school youth in twelve cities were recruited to be in the Evaluation of the Center for Employment Training Replication Sites.¹² CET, which originated in San Jose, California, is an intensive, full-time vocational education program that provides training in a worklike setting and involves local employers in the design and delivery of training. CET-San Jose was the only site to produce positive results in two separate random assignment studies of job training programs: the Minority Female Single Parent (MFSP) Demonstration and the JOBSTART Demonstration, which was targeted toward disadvantaged youth.¹³ The CET replication demonstration — initiated in 1992 and funded by the U.S. Department of Labor (DOL) — was designed to test whether the CET model could be implemented successfully in different settings and could again produce positive effects on the youth served by the program.

Eligible youth who were interested in applying for CET attended orientation sessions at the site. Those who were still interested after this initial session were encouraged to return to the site on a later day to obtain necessary documents and to attend classes. At some sites, youth were required to return to the site for as many as five consecutive days, to confirm their interest in the program. This strategy was used to screen out less motivated applicants and to reduce the number of applicants who would subsequently drop out of the program. After this period of application — ranging from two to five days across sites — applicants who were still interested in

⁸Angrist and Evans (1998).

⁹Light and Ureta (1995).

¹⁰Freeman and Rodgers (1999).

¹¹Holzer (1996).

¹²Listed from east to west, the sites include New York, NY; Camden and Newark, NJ; Reidsville, NC; Orlando, FL; Chicago, IL; Reno, NV; and El Centro, Oxnard, Riverside, San Francisco, and Santa Maria, CA.

¹³Zambrowski, Gordon, and Berenson (1993); Cave, Bos, Doolittle, and Toussaint (1993).

CET were randomly assigned either to the program group and were eligible for CET services or to a control group and were not eligible for CET for 24 months.

The replication effort is being evaluated by MDRC and Berkeley Policy Associates (BPA). The first report of the evaluation assessed implementation of the CET model across sites, and the second report examined the program's effects after 30 months. The final report presents findings after 54 months.¹⁴ In sum, fidelity to the CET model varied considerably across the twelve sites, with only four of them implementing the model with high fidelity. In these four high-fidelity sites, access to CET had no effect on youth employment overall but was found to have positive effects after 30 months among women and negative effects among men. However, these effects did not persist. By Month 54, access to CET had no effects on employment or earnings for the sample as a whole or for several subgroups. CET had negligible effects in the eight sites designated as implementing the model with medium or low fidelity.

Because access to CET was found to have no effects on employment and earnings, the analyses for this paper include youth in both the program group and the control group. CET did have a positive effect on rates of vocational training and certificate receipt, but all these effects occurred within the first 9 months of follow-up. For this reason, much of the analysis in this paper focuses on employment in Years 2 through 4, while data on wages and job type are for the last job held before the most recent survey. Participants in the study completed both a detailed phone survey 30 months after random assignment and an identical follow-up survey 54 months after random assignment. The sample for this paper includes youth who responded to the 54-month survey and provided enough information in both surveys to determine their 48-month employment histories; this sample includes approximately 69 percent of study enrollees.¹⁵

The application process was such that the youth who ultimately enrolled in the study were likely to be a relatively motivated subset of all disadvantaged youth. In fact, the evaluation reports highlight this issue as one possible reason for the lack of program effects: The motivated sample — in conjunction with the strong economy for much of the follow-up period and the availability of other education and training options — created a high hurdle for the CET program to overcome. Both employment rates and rates of training (in community colleges, for example) were fairly high for the control group. Table 1 presents selected characteristics of the

¹⁴The evaluation includes three reports. The first report describes the program's implementation experience, the characteristics of the youth who participated in the study, and early participation in program activities (Walsh, Goldsmith, Abe, and Cann, 2000). The second report presents effects 30 months after the youth entered the evaluation (Miller et al., 2003). The final report presents 54-month findings (Miller et al., 2005).

¹⁵After data from the 30- and 54-month surveys were merged, the overall employment rate dipped noticeably in the few months after Month 30, due most likely to recall problems on the 54-month survey. The data were “smoothed” in the following manner: For respondents who were employed in Month 30 but not employed in Month 31, the employment spell was randomly extended by 0 to 6 months. This adjustment affected approximately 10 percent of the sample in Months 31 to 34 and smaller percentages through Month 42.

Barriers to Employment for Out-of-School Youth

Table 1

Selected Characteristics of Respondents to the CET 54-Month Survey Compared with Characteristics of JOBSTART Applicants and JTPA Title II-C Youth

Characteristic (%)	CET Respondents	CET-JOBSTART Applicants	JTPA Title II-C Youth ^a
Average age (years)	19.2	NA	19.2
Gender			
Female	60.2	49.7	64.9
Male	39.8	50.3	35.1
Race/ethnicity			
Hispanic	41.4	70.9	23.0
Black	51.5	6.0	34.5
White	5.4	15.0	38.3
Other	1.1	9.0	4.2
Education			
School dropout	56.4	100.0	52.8
High school diploma or GED	39.8	0.0	42.0
Any college study	3.7	NA	5.2
English language proficiency			
No limited English proficiency	87.6	NA	95.5
Limited English proficiency	12.4	NA	4.5
Family status			
Has own children	39.3	10.2	34.0
Does not have own children	60.7	89.8	66.0
Offender or ex-offender ^b			
Yes	7.1	17.1	NA
No	92.9	82.9	NA
Sample size	1,136	167	73,340

SOURCE: MDRC calculations from CET baseline data.

NOTES: The sample analyzed here includes both program and control group sample members.

^aTo ensure a closer comparison with the replication sites, the JTPA sample was limited to out-of-school youth between the ages of 17 and 21 who participated in occupational training. These youth terminated from JTPA Title II-C programs between June 1, 1997, and June 30, 1998.

^bThe baseline form asked program applicants for CET whether they were an offender or ex-offender. In the JOBSTART evaluation, program applicants were asked whether they had been arrested since age 16.

CET sample (those who responded to the 54-month survey) and two other groups: participants in the JOBSTART evaluation at the CET site and youth who were served by occupational training programs under Title II-C of the Job Training Partnership Act (JTPA).¹⁶ A key difference between the CET replication sample and the other samples is race/ethnicity, with over 90 percent of the replication sample being either black or Hispanic. The CET-JOBSTART sample, by design, is more disadvantaged in terms of education levels and arrest history. On the other hand, the CET replication sample looks fairly similar to the sample of youth who received occupational training in mainstream JTPA programs. This similarity, at least in terms of basic demographic characteristics, suggests that the findings can be generalized to the broader population of youth who participate in federally funded job training programs.

Employment Experiences and Education Level

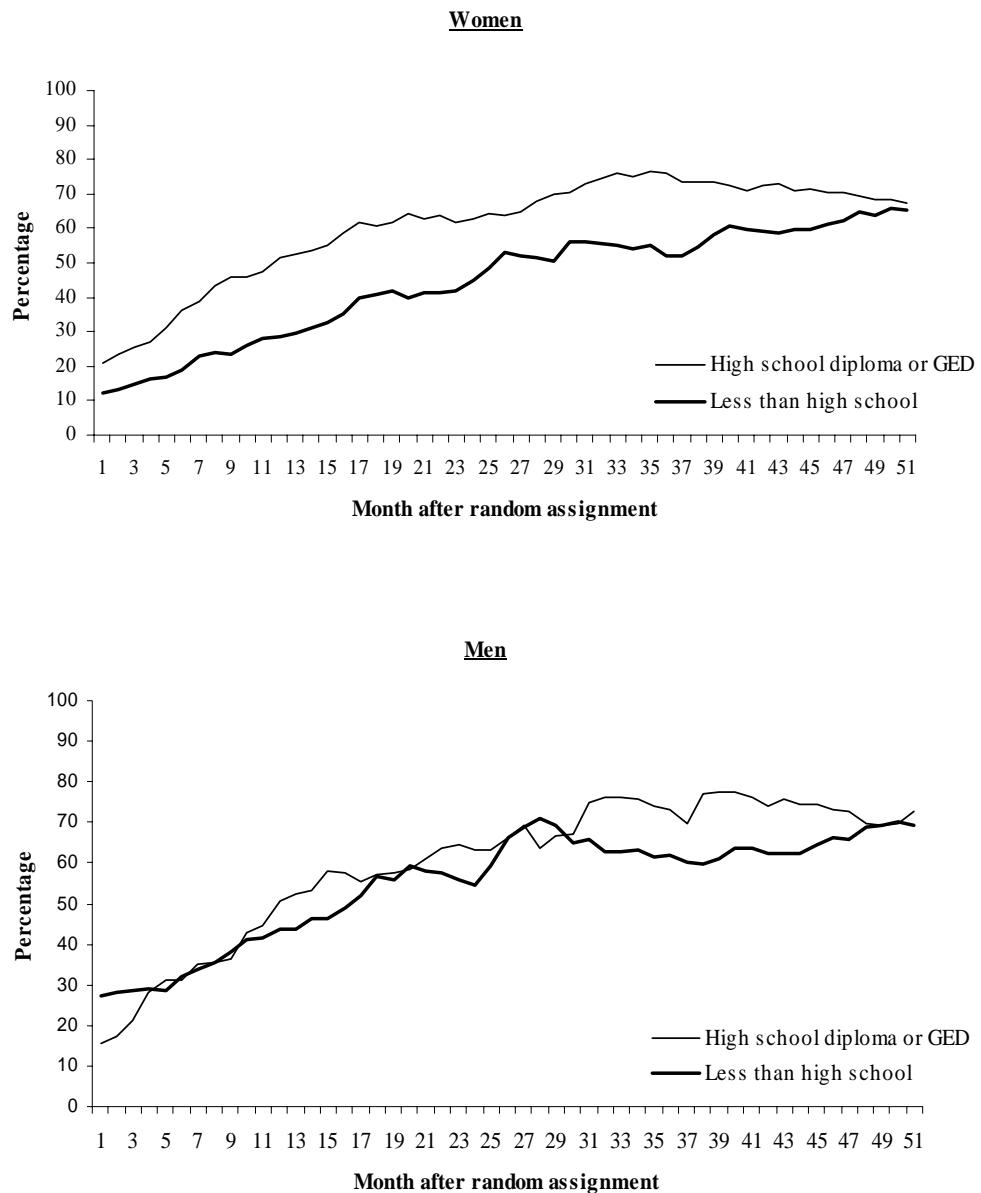
Employment

About 56 percent of the CET youth — 54 percent of women and 58 percent of men — did not have a high school diploma or a General Educational Development (GED) certificate at program entry. Figure 1 presents monthly employment rates by education level and shows that the lack of a high school diploma or GED seems to matter more for women than for men. Female dropouts had employment rates throughout the period that are 20 percentage points lower than their counterparts with a high school diploma, although this difference narrowed considerably in the last several months. In contrast, employment rates for male dropouts tracked those for graduates fairly closely until the latter part of the follow-up period. Although the follow-up period corresponds to different calendar years, depending on the date of random assignment, this drop in employment rates for male dropouts may reflect the weaker economy of the early 2000s. A later section examines whether dropouts' employment rates are especially responsive to local economic conditions.

Table 2 presents employment data for Years 2 through 4, or Months 13 through 48. The top row shows that graduates of both sexes were employed for a greater percentage of the time than dropouts. The next two rows address whether the lower employment rates for dropouts were due to longer spells of nonemployment or to greater employment instability (higher rates of leaving employment). A reflection of the duration of nonemployment spells is the monthly transition rate from nonemployment to employment, calculated over all person-months employed and showing the probability of moving into employment in a given month conditional

¹⁶To ensure a closer comparison with the replication sites, the JTPA sample was limited to out-of-school youth between ages 17 and 21 who participated in occupational training. These youth were terminated from JTPA Title II-C programs between June 1, 1997, and June 30, 1998.

Barriers to Employment for Out-of-School Youth
Figure 1
Employment Rates, by Gender and Education Level



Barriers to Employment for Out-of-School Youth

Table 2
**Employment in Years 2 Through 4,
by Gender and Education Level at Random Assignment**

	Women		Men	
	High School Diploma or GED	No High School Diploma or GED	High School Diploma or GED	No High School Diploma or GED
Percentage of months employed	66.4	49.4	68.1	59.4
Monthly transition probabilities				
Employment to nonemployment	0.034	0.053	0.028	0.040
Nonemployment to employment	0.082	0.069	0.073	0.075
Sample size	279	334	163	240

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up survey data.

NOTES: Sample weights were used. Transition probabilities were calculated over person-month data.

on being unemployed in the previous month. Monthly transitions from employment to nonemployment, on the other hand, reflect employment instability.¹⁷

The data in Table 2 show that, among women, the lower employment rates for dropouts than for graduates were due both to longer nonemployment spells and to higher employment instability. Dropouts were both more likely to leave employment in a given month (0.034 versus 0.053) and less likely to move into employment if unemployed (0.082 versus 0.069). Among men, in contrast, the differences between the two education groups appear to be due to higher rates of employment instability. Transition rates into employment are similar for dropouts and graduates. The final section of the paper uses a multivariate model to examine the effect of education level on employment transitions.

Jobs

How is education level associated with the quality and types of jobs held by the study participants? Table 3 compares the job characteristics of survey respondents, by gender and education level, focusing on the most recent job held before the 54-month survey, among those who had at least one job between the 30- and 54-month surveys. On average, those who had a high school credential earned higher wages, and the differences by education level are much greater for women than for men. Women who did not have a high school diploma or GED when they entered the study earned, on average, \$8.77 per hour — 10 percent less than their counterparts who had a high school credential. Average wages for men, in contrast, did not vary by education level.

The greater wage differentials among women may be partially explained by the differences in employment rates described above, since female dropouts accumulated less work experience than female graduates. However, the differential may also be explained by the different types of jobs available to and sought out by the young women. For example, the women were more likely than the men to work in professional services, while the men were more likely to work in manufacturing or construction. A high school diploma may be valued more in professional services than in manufacturing and construction. Another factor explaining the greater wage differentials for women may be that women who do not have a high school credential are also more likely to have additional barriers to employment, such as higher rates of childbearing. A multivariate model in the final section of the paper examines this issue by estimating the effect of education on wages. In addition, the intersection of education level and childbearing is explored in the next section.

¹⁷As mentioned above, Holzer and Lalonde (2000) use this method to examine weekly transitions into and out of employment and jobs.

Barriers to Employment for Out-of-School Youth

Table 3

Job Characteristics, by Gender and Education Level at Random Assignment

	Women		Men	
	High School Diploma or GED	No High School Diploma or GED	High School Diploma or GED	No High School Diploma or GED
<u>Characteristics of most recent job</u>				
Average wage	9.73	8.77	10.14	9.99
Median wage	9.00	8.00	9.00	9.00
Provided health insurance	56.8	39.9	54.2	41.2
Industry				
Construction/manufacturing	8.2	10.5	25.2	31.1
Retail trade	24.7	32.9	18.0	25.8
Eating/drinking establishments	8.1	11.0	6.3	11.2
Professional services	31.9	24.4	10.4	3.4
Health services	20.9	15.5	3.6	1.5
Other services	20.2	23.7	18.3	17.9
Other industry	14.4	6.8	26.7	21.0
Occupation				
Sales	17.8	19.3	7.7	5.7
Clerical	31.5	27.2	16.6	8.8
Services	23.3	30.6	18.7	20.9
Operatives/laborers	5.2	7.8	30.5	39.4
Other	22.2	14.4	21.0	24.8
Sample size	279	334	163	240

SOURCES: MDRC calculations from CET enrollment form and 54-month follow-up survey.

NOTES: Sample weights were used. For some outcomes, the sample size may be smaller than the full sample size due to missing observations.

Table 3 also presents data on employer-provided health insurance, another measure of job quality. Across all groups, a large percentage of survey respondents did not have health insurance benefits. The lack of insurance is troubling, given that these “youth” were between ages 20 and 25 at the time of the 54-month survey; many were no longer dependents and had started families. Employer-provided health insurance varied by education level among both women and men. Only 40 percent of female dropouts and 41 percent of male dropouts had health benefits at their most recent job, compared with 57 percent and 54 percent of female and male graduates, respectively. These findings highlight the challenges faced by disadvantaged youth in finding good jobs. Among the men, the findings also show that even when dropouts find jobs that provide wages similar to the wages of graduates, the jobs are of lower quality.

Are the payoffs to a high school credential related to finding different types of jobs in terms of industry and occupation, or do graduates earn more within the same industries and occupations? The middle of Table 3 shows the industries and occupations of respondents’ most recent jobs. The data suggest that different job types may partially explain the wage differences. For example, respondents without a high school credential were more likely to be employed in the construction and manufacturing sectors and in retail trade and were less likely to be employed in professional and other services. In terms of occupation, dropouts of both genders were more likely to be employed in service positions or as operatives and laborers, and they were less likely to be employed in clerical positions. The final section of the paper examines whether these wage differences persist after accounting for other characteristics that may vary by education level, including job occupation and industry.

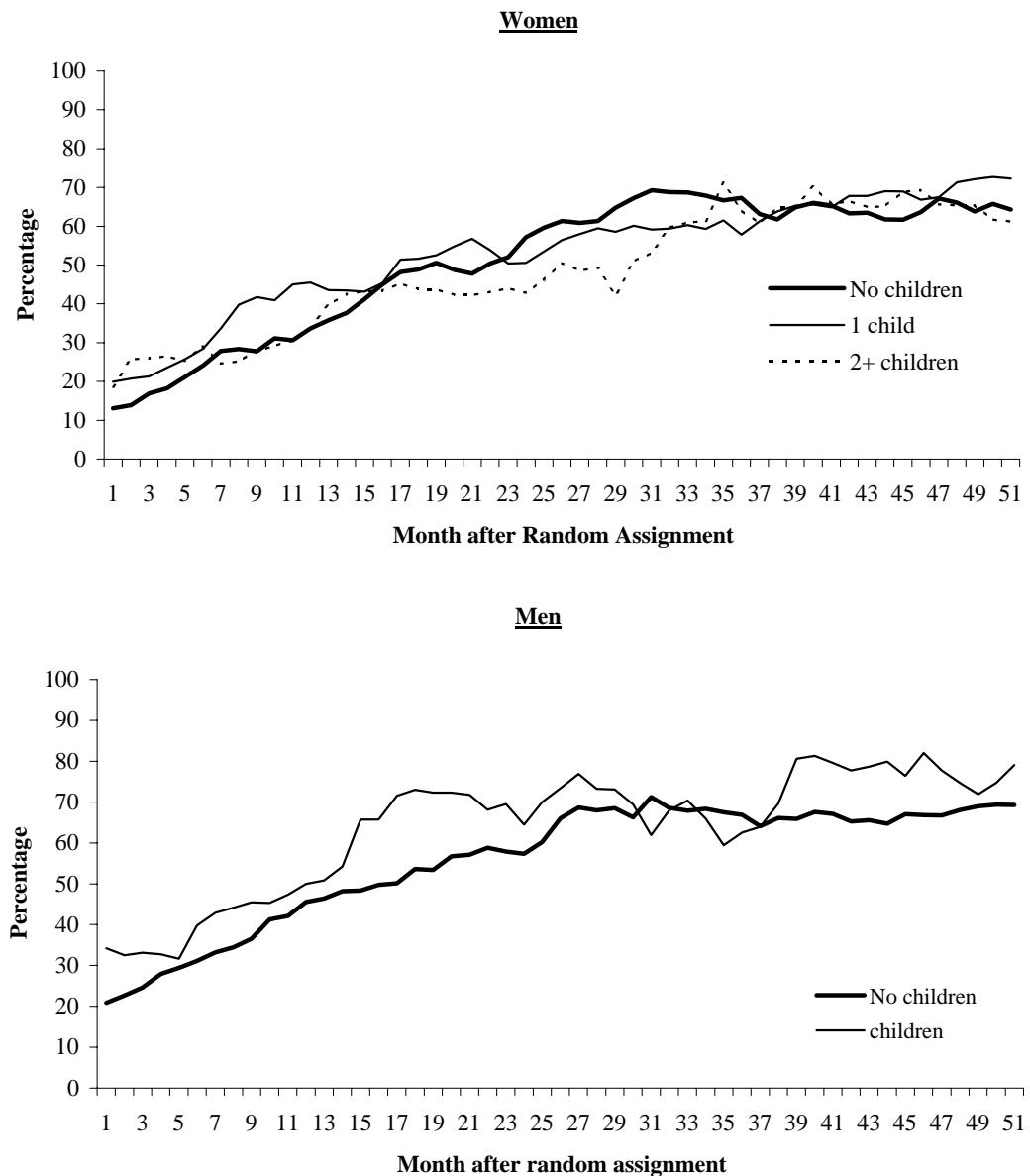
Employment Experiences and Childbearing Status

Employment

Figure 2 presents respondents’ employment rates according to the number of children they reported having at the point of random assignment. While most of the women who reported having children also reported living with these children, 56 percent of the men did not live with their children. For the four-year period as a whole, employment differences among the groups for women were not large. However, women with one child had higher employment rates in the first year, while those with two children had lower rates during the middle part of the period. Over the last year, the three groups were similar. Among men, those who had children tended to work more during the follow-up period.

Table 4 tells a similar story. Among women, those who had two or more children worked slightly less than other women during the period. The transition data show that the key difference between women with and without children is in the rate of leaving employment

Barriers to Employment for Out-of-School Youth.
Figure 2
Employment Rates, by Gender and Number of Children



Barriers to Employment for Out-of-School Youth

Table 4

Employment in Years 2 Through 4, by Gender and Number of Children at Random Assignment

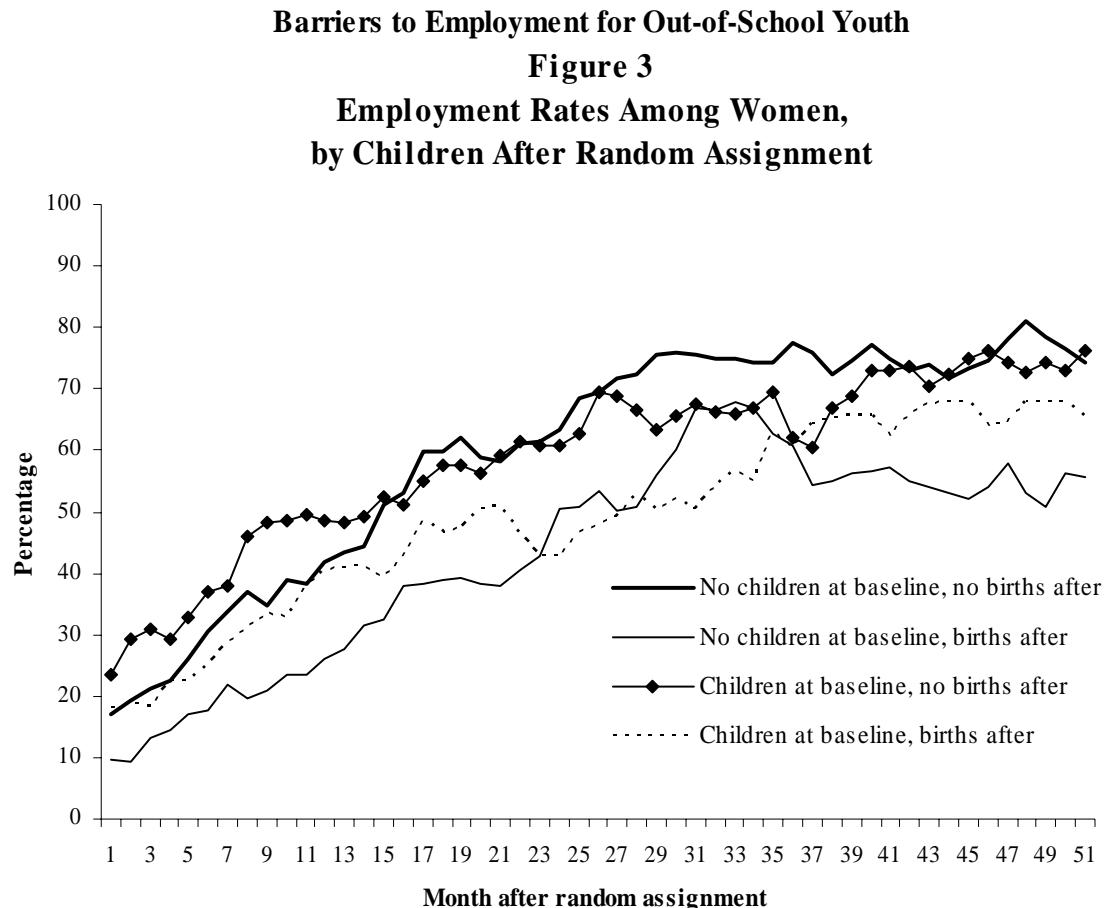
	Women			Men	
	No Children	One Child	Two or more Children	No Children	One or more Children
Percentage of months employed	57.8	57.5	54.7	61.6	71.3
Monthly transition probabilities					
Employment to nonemployment	0.040	0.046	0.046	0.033	0.028
Nonemployment to employment	0.073	0.077	0.072	0.080	0.090
Sample size	300	227	84	352	66

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up survey data.

(0.046 for those with children versus 0.040 for those without children). Among men, in contrast, those who had children worked more months of the period, in part due to greater employment stability and in part due to shorter spells of nonemployment.

One reason for the small differences related to childbearing status among women may be that some respondents had children later in the follow-up period. In particular, women who had two or more children at study entry may have worked at rates similar to those who had no children, because many in the latter group did have children by Year 4. In fact, 50 percent of the group with no children at baseline had children at the 54-month survey. However, about 56 percent of those who had children at baseline also went on to have more children at the 54-month point.

Figure 3 presents employment rates among women according to childbearing status both at and after random assignment. Although it is expected that new births will reduce employment at least in the short run, it is still interesting to examine how employment and childbearing are associated over the entire follow-up period. The first thing to note is that, among the



women who did not have children after random assignment, those who started out with children did nearly as well as those who did not; their employment rates were lower only in Year 3. It is difficult to say from this comparison, however, that childbearing had no effect on employment, since the two groups differed in other ways. In particular, the women with no children at baseline were somewhat younger, better educated, and much more likely to be living with their parents at the 30-month survey.¹⁸ Living arrangements, for example, are likely to be correlated with employment rates. Among women with children, those who lived with their parents at Month 30 worked more over the period than those who had other living arrangements. Among women without children at baseline, those who lived with their parents or a partner at Month 30 worked somewhat less over the period than those who lived on their own. Finally, among the women who did have children later on, Figure 3 shows that those who did not have children at random assignment tended to have the lowest employment rates. This pattern may have something to do with the effect of a first birth versus a higher-order birth.

The section above about employment and education level shows that female dropouts in the study had much lower employment rates than high school graduates. Figure 4 examines how both education and childbearing are associated with employment. For example, is childbearing more strongly associated with employment rates among dropouts? The figure shows that the women with the highest employment rates are high school graduates who had children at baseline, while the women with the lowest employment rates are dropouts who had children. On the one hand, lacking a high school diploma appears to be more strongly associated with employment rates among the women who had children. Among those with no children at baseline, differences in employment as measured by education level are much smaller. The findings are similar to those reported by Holzer and Lalonde.¹⁹ Looked at another way, the data suggest that having children at baseline did reduce employment rates, but only for dropouts. Table 5 presents summary employment data and transition rates for these groups of women. Female dropouts who had children worked the least of all the groups, due mostly to higher employment instability but also in part to longer spells of nonemployment.

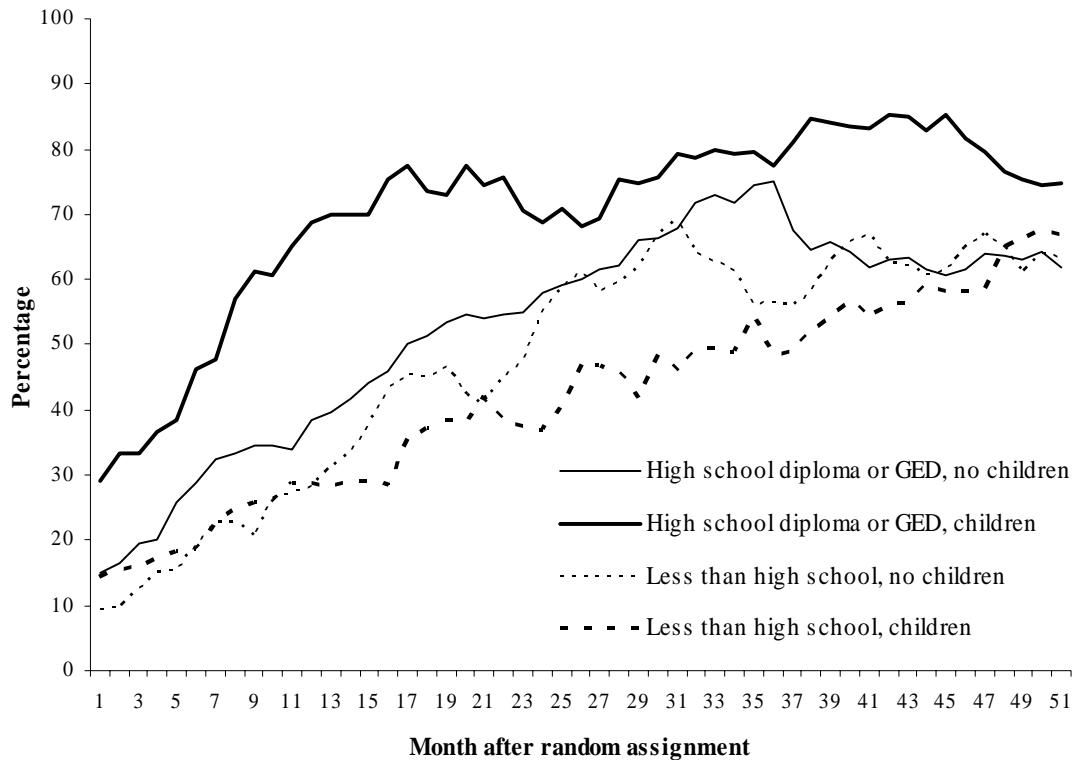
Jobs

Table 6 presents the characteristics of survey respondents' most recent job, by gender and childbearing status at random assignment. The top rows show that, among the women, the pattern for wage rates is roughly similar to the pattern for employment rates (Table 4). For example, those young women who had one child at random assignment had the highest average

¹⁸Information on living arrangements at study entry is not available.

¹⁹Holzer and Lalonde (2000).

Barriers to Employment for Out-of-School Youth
Figure 4
Employment Rates Among Women,
by Education Level and Children at Random Assignment



wage at the last job they held: \$9.68 per hour. The women who had no children at random assignment earned an average of just \$8.91 per hour, and the women with two or more children earned an average of \$8.83 per hour. On the one hand, the higher wages for women who had one child at baseline may reflect — in addition to greater work experience — other differences in this group's characteristics. On the other hand, women who had two or more children were the most likely to have employer-provided health insurance — a benefit that, for this group, may have been a higher priority than wages. The women with two or more children were also more likely to work in professional services and were less likely to work in retail trade than the women who had either one child or no children at baseline.

Among men, Table 6 shows that those who had children before entering the study had higher wages and were more likely to have employer-provided health insurance than men who did

Barriers to Employment for Out-of-School Youth

Table 5

Employment Among Women in Years 2 Through 4, by Children and Education Level

	No Children		Children	
	High School Diploma or GED	No High School Diploma or GED	High School Diploma or GED	No High School Diploma or GED
Percentage of months employed	58.6	56.7	76.6	45.3
Monthly transition probabilities				
Employment to nonemployment	0.037	0.042	0.034	0.061
Nonemployment to employment	0.072	0.070	0.083	0.065
Sample size	155	128	111	188

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up survey data.

NOTES: Sample weights were used. Transition probabilities were calculated over person-month data.

Barriers to Employment for Out-of-School Youth

Table 6
Job Characteristics, by Gender and Number of Children

	Women			Men	
	No Children	One Child	Two or More Children	No Children	Children
Characteristics of most recent job					
Average wage	8.91	9.68	8.83	10.00	10.70
Median wage	8.10	9.00	8.00	9.00	10.00
Provided health insurance	47.0	46.5	54.1	44.8	53.3
Industry					
Construction/manufacturing	10.0	6.2	17.3	30.1	20.1
Retail trade	28.2	31.3	25.8	12.5	14.2
Eating/drinking establishments	8.8	10.3	9.8	9.5	6.9
Professional services	27.6	25.1	41.4	6.3	5.2
Health services	19.6	16.7	17.2	2.4	3.0
Other services	20.2	28.6	8.9	17.2	23.3
Other industry	12.3	8.6	6.5	20.1	37.3
Occupation					
Sales	19.0	19.8	14.7	5.8	9.0
Clerical	30.2	29.3	20.7	12.9	4.6
Services	23.5	29.4	35.5	21.1	14.9
Operatives/laborers	8.8	5.0	4.6	34.5	45.7
Other	18.1	15.9	24.5	23.4	23.5
Sample size	300	227	84	352	66

Job Characteristics Among Women, by Childbearing Status Before and After Random Assignment

	No Children at Random Assignment		Children at Random Assignment	
	No Births After	Births After	No Births After	Births After
Characteristics of most recent job				
Average wage	9.40	8.40	9.80	9.00
Median wage	9.00	7.80	9.00	8.00
Provided health insurance	44.6	51.2	49.4	49.7
Sample size	142	142	129	171

SOURCES: MDRC calculations from CET enrollment form and 54-month follow-up survey.

NOTES: Sample weights were used. For some outcomes, the sample size may be smaller than the full sample size due to missing observations.

not have children at baseline. Since the men with children worked more during the four years of the study (Table 4), their higher wages likely reflect more work experience but may also reflect other differences in this group's characteristics. Men who had children at baseline also tended to work in different types of jobs than men without children. For example, they were less likely to work in service positions and were more likely to work as operatives or laborers.

Because the groups in the upper panel of Table 6 are defined by childbearing status before entering the CET replication study, the data show the relationship between wages and having children at an early age (16 to 22) rather than between wages and new births. As mentioned above, more than half the women in the study had children after random assignment. Therefore, the lower panel of Table 6 compares the wages and health benefits of women according to childbearing status both before and after entering the study. In line with the findings on employment rates, the women who did not have children after random assignment had more success in the labor market, even if they had a child before random assignment. Women who had their first child after random assignment had the lowest wage at their most recent job, which may reflect the effect of time spent out of the labor market. The rates of health insurance receipt across all four groups of women are similar, but the rate is lowest for the women who had no children either before or after random assignment.

Table 7 examines the association of childbearing and education level with the job characteristics of female respondents. The women with the highest wages are those who had children at random assignment and who had a high school diploma or GED. This group also had the highest employment rates over the period. The women with the lowest wages are those who had no children and who did not have a high school diploma or GED at random assignment. The pattern with respect to employer-provided health insurance is similar to that for wages.

Finally, there are a few differences in the women's job industry and occupation categories. The respondents in the highest wage group (high school graduates who had children at random assignment) were more likely to work in professional services and in clerical positions, while dropouts who had children were less likely to work in professional services — particularly health services — and in clerical positions and were most likely to work in service occupations.

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Table 7

Job Characteristics Among Women, by Education Level and Children at Random Assignment

	No Children		Children	
	High School Diploma or GED	No High School Diploma or GED	High School Diploma or GED	No High School Diploma or GED
<u>Characteristics of most recent job</u>				
Average wage	9.53	8.38	10.02	9.19
Median wage	9.00	7.80	9.60	8.30
Provided health insurance	59.0	37.7	54.1	43.6
Industry				
Construction/manufacturing	8.2	11.9	8.8	9.5
Retail trade	25.2	28.3	23.3	32.5
Eating/drinking establishments	7.5	7.4	8.5	11.5
Professional services	28.5	25.8	36.1	24.8
Health services	21.0	19.3	21.2	13.5
Other services	18.6	24.3	23.0	24.9
Other industry	19.5	6.1	8.9	7.9
Occupation				
Sales	18.1	20.5	16.7	17.8
Clerical	31.0	31.3	33.0	24.1
Services	24.6	20.9	21.3	37.5
Operatives/laborers	5.6	12.3	5.1	5.0
Other	20.7	14.0	23.9	14.8
Sample size	155	128	111	188

SOURCES: MDRC calculations from CET enrollment form and 54-month follow-up survey.

NOTES: Sample weights were used. For some outcomes, the sample size may be smaller than the full sample size due to missing observations.

Employment Experiences and Arrest History

Employment

Figure 5 presents employment rates according to arrest status both at and after random assignment.²⁰ This section focuses only on the men in the study, since very few of the women had been arrested. Like the employment differences related to education level (Figure 1), the differences by arrest history did not emerge until the second half of the follow-up period. The final section of the paper examines whether men who had a previous arrest were especially vulnerable to the weaker economy. However, this pattern may also reflect subsequent arrests: 50 percent of the men who had been arrested before baseline were arrested again by the 30-month survey (compared with only 9 percent of those who had not been arrested before baseline). Figure 5 suggests, however, that this is not the factor driving the lower employment rates of the men with arrests before baseline, since their rates are almost identical to the rates for the subset of repeat offenders.

Table 8 presents the men's summary employment data and transition rates. Men with arrests prior to entering the study worked less over the follow-up period, due largely to longer spells of nonemployment. This result is consistent with other research showing that the key difficulty faced by ex-offenders is finding a job. Employers have shown a strong reluctance to hire men who have been arrested.²¹

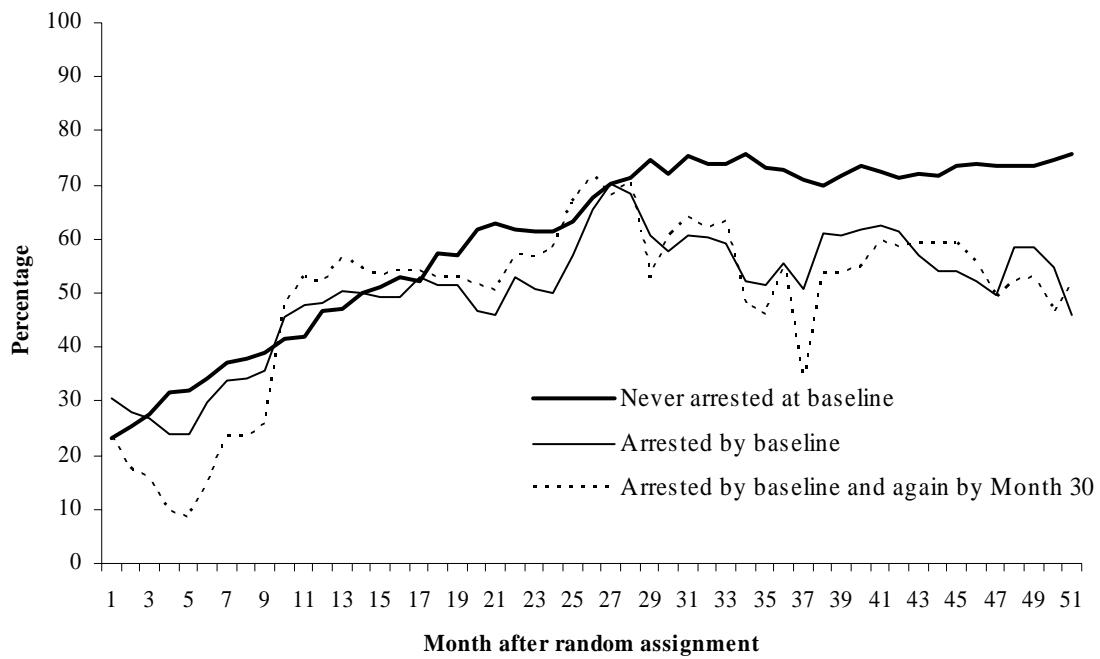
Jobs

Table 9 shows that the men who had an arrest before random assignment earned 21 percent less than nonoffenders — \$8.29 per hour, compared with \$10.50 per hour. The difference in wage rates — already substantial — may slightly underestimate the association between an arrest record and wages, because the nonoffender group also includes a small fraction of men who were subsequently arrested after study entry. Only 27 percent of ex-offenders worked in jobs that provided health insurance, compared with 50 percent of nonoffenders. Thus, the young men who had an arrest record not only worked at much lower rates than those without a record but also worked in lower-paying, lower-quality jobs. Finally, Table 9 shows that ex-offenders

²⁰Arrest status at random assignment is determined by the intake form, which states that the participant has to have been arrested or convicted of an offense other than a misdemeanor. Arrest status during follow-up is determined from the 30-month survey, which asks respondents to report whether they have been arrested and charged with a crime or parole violation since random assignment. A follow-up question asks about the nature of the charges. Although the response rate to the follow-up question is low, the two most common responses are “drug-related offense” and “parole violation.”

²¹Holzer (1996).

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Figure 5
Employment Rates Among Men, by Arrest Status



also worked in different industries and occupations. In particular, they were much more likely than nonoffenders to work in eating and drinking establishments, a subset of retail trade.

Multivariate Models

The previous sections document associations between the CET study participants' employment and earnings outcomes and their education level, childbearing, and arrest status. In some cases, these associations are quite strong. Female dropouts, for example, were significantly less likely to work and had much lower wages than women who had a high school diploma. This section examines how much of this association is due to education level per se versus other factors that may be correlated with education level.

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Table 8

Employment Among Men in Years 2 Through 4, by Offender Status at Random Assignment

	Men	
	Not an Offender	Offender
Percentage of months employed	66.3	55.6
Monthly transition probabilities		
Employment to nonemployment	0.034	0.039
Nonemployment to employment	0.086	0.055
Sample size	289	55

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up survey data.

NOTES: Sample weights were used. Transition probabilities were calculated over person-month data.

Tables 10 and 11 present multivariate models for monthly transition probabilities. Table 10 focuses on transitions from employment to nonemployment, where the outcome is the probability of moving into nonemployment in a given month conditional on being employed in the previous month. The data are arranged in person-months. An individual who worked for two spells of 10 months each, for example, would contribute 20 observations to the data set. In addition to education level, childbearing status, and arrest status, all models include variables for site, race/ethnicity, age, spell length of current employment (or nonemployment), spell number, a dummy variable for the years 2000-2003 (where the omitted category is 1996-1999), and dummy variables for observations that are missing education level, number of children, and arrest status.²² Also included is the local area unemployment rate, based on monthly data obtained from DOL's Bureau of Labor Statistics.²³ The left-hand set of columns in each table presents the coefficients of key predictors of employment outcomes from models without any interactions;

²²Rates of missing data for women are less than 4 percent for education level and for number of children at baseline. Rates for men are somewhat higher: 4 percent for education level, 11 percent for number of children, and 18 percent for arrest status. For men, the results were similar when cases that had missing observations were dropped from the analysis.

²³For all but one of the CET sites, unemployment rates ranged from 3 percent to about 7 percent over the period, increasing somewhat over time. Unemployment rates for Santa Maria, however, ranged from 20 percent to 35 percent, making it a clear outlier. Data for the Santa Maria site are dropped for the regression analyses. The results for the other variables were similar to those shown in the table when these data were included.

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Table 9
**Job Characteristics Among Men,
by Offender Status at Random Assignment**

	Men	
	Not an Offender	Offender
Characteristics of most recent job		
Average wage	10.50	8.29
Median wage	9.70	7.90
Provided health insurance	50.2	27.4
Industry		
Construction/manufacturing	30.6	25.3
Retail trade	22.4	25.0
Eating/drinking establishments	7.6	20.5
Professional services	6.6	2.0
Health services	3.0	0.7
Other services	17.7	16.9
Other industry	21.4	30.1
Occupation		
Sales	5.1	9.3
Clerical	11.2	7.3
Services	19.6	21.3
Operatives/laborers	36.1	36.9
Other	26.1	19.6
Sample size	289	55

SOURCES: MDRC calculations from CET enrollment form and 54-month follow-up survey.

NOTES: Sample weights were used. For some outcomes, the sample size may be smaller than the full sample size due to missing observations.

the right-hand set of columns presents the coefficients from models that include interactions of education level and children (for women) or education level and arrest status (for men).

The top panel of Table 10 shows that, among women in the study, the probability of leaving employment followed the typical inverted U-shape, increasing in the early months of the employment spell (Months 4 to 6) and falling off as the spell continued. The relation between education and employment holds up in the multivariate context: Dropouts were more likely to leave employment in a given month. Although the unemployment rate is expected to primarily affect transitions into employment, the results suggest that a higher unemployment

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Table 10
The Determinants of Transitions from Employment to Nonemployment:
Ordinary Least Squares Estimates

	Coefficient	Standard Error	Coefficient	Standard Error
Women				
Spell length				
4-6 months	0.012	(0.006) *	0.012	(0.006) *
7-10 months	-0.005	(0.007)	-0.005	(0.007)
11 months or more	-0.020	(0.006) **	-0.019	(0.006) **
Had children at baseline	0.004	(0.004)	-0.008	(0.006)
Less than high school diploma	0.017	(0.004) ***	0.005	(0.006)
Children and less than high school diploma			0.025	(0.008) ***
Hispanic	0.000	(0.009)	0.002	(0.009)
Black	0.003	(0.008)	0.003	(0.008)
Age				
19-20 years	0.010	(0.005) **	0.011	(0.005) **
21 years or more	0.003	(0.006)	0.003	(0.006)
Local unemployment rate	-0.007	(0.003) ***	-0.007	(0.003) **
Men				
Spell length				
4-6 months	-0.005	(0.008)	-0.005	(0.008)
7-10 months	0.016	(0.008) **	0.016	(0.008) **
11 months or more	-0.008	(0.007)	-0.007	(0.007)
Had children at baseline	-0.005	(0.006)	-0.006	(0.007)
Less than high school diploma	0.010	(0.005) **	0.008	(0.005)
Arrested by baseline	0.001	(0.007)	-0.006	(0.010)
Arrested and less than high school diploma			0.012	(0.013)
Hispanic	-0.022	(0.007) ***	-0.022	(0.007) ***
Black	-0.006	(0.007)	-0.005	(0.007)
Age				
19-20 years	-0.008	(0.005)	-0.008	(0.005)
21 years or more	-0.001	(0.008)	-0.001	(0.008)
Local unemployment rate	0.000	(0.003)	0.000	(0.003)

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up surveys.

NOTES: Also included in each model are variables for site, spell number, months spanning the seam between the two surveys, the year 2000 and after, and missing status for education, children, and prior arrest. Sample weights were used. Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and * = 10 percent. Sample sizes are 10,873 for women and 6,936 for men.

rate lowers the probability of leaving employment. This effect may operate through a reduced incentive to leave work and shop around for other opportunities. Finally, the right-hand set of columns tests the interaction of education and childbearing status, showing that dropouts who had children at study entry had higher rates of leaving employment than dropouts without children — as shown in the earlier section.

The bottom panel of Table 10 presents results for men. Male dropouts had higher transition rates into nonemployment, and arrest history had no effect. These findings are also similar to the results presented above. The right-hand set of columns suggests that there is no interaction effect of arrest status with education level.

Table 11 presents results for transitions into employment. The top panel shows that women who had children at baseline were more likely to move into employment in a given month, once other factors are controlled for, and that female dropouts were less likely to find jobs. The interaction in the right-hand set of columns shows that female dropouts who had children were less likely to find jobs than dropouts without children — with a relatively large effect of -0.050. The local unemployment rate had little effect on women's employment probabilities. The results for men, in the bottom panel of the table, show that dropout status had no effect on job-finding (which is consistent with the results above) and that arrest status had a large negative effect. Finally, a higher local unemployment rate reduced the men's transitions into work.

The previous exhibits that examine men's education level and arrest status (Figures 1 and 5) show a divergence between the more advantaged and the less advantaged groups during the second half of the follow-up period. This pattern may reflect the economic downturn during the later part of the follow-up period, if employment rates for male dropouts and for men with arrest histories are more sensitive to local economic conditions. This idea is tested by interacting the local unemployment rate with these two barriers in the employment transition models. As shown in the right-hand set of columns in Table 12, there is no evidence that transitions into employment were more strongly affected by the unemployment rate for these two groups of men. However, evidence of some difference was found between the 1996-1999 period and the 2000-2003 period, which also corresponds to before and after the downturn. Under Regression 2, the right-hand set of columns suggests that dropouts were more likely to move into employment in the later period (with a coefficient that is marginally statistically significant) and that offenders were much less likely to move into employment.

The findings in Table 12 for male dropouts do not correspond to Figure 1, with the exception of the somewhat higher probabilities of nonemployment for dropouts in the later period (although the coefficient of 0.014 is not statistically significant). Whether these effects are measuring differential responses to the economy is unclear, but there are several reasons to suspect that they may be picking up such effects. First, the data on local area unemployment rates

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Table 11
The Determinants of Transitions from Nonemployment to Employment:
Ordinary Least Squares Estimates

	Standard Coefficient	Standard Error	Standard Coefficient	Standard Error
<u>Women</u>				
Spell length				
4-6 months	0.013	(0.008)	0.014	(0.008) *
7-10 months	-0.013	(0.009)	-0.012	(0.009)
11 months or more	0.013	(0.008)	0.014	(0.008) *
Had children at baseline	0.011	(0.007) *	0.045	(0.011) ***
Less than high school diploma	-0.019	(0.007) ***	0.002	(0.009)
Children and less than high school diploma			-0.050	(0.013) ***
Hispanic	0.021	(0.013)	0.023	(0.013) *
Black	0.016	(0.012)	0.018	(0.012)
Age				
19-20 years	-0.015	(0.007) **	-0.014	(0.007) **
21 years or more	0.004	(0.009)	0.003	(0.009)
Local unemployment rate	-0.003	(0.004)	-0.003	(0.004)
<u>Men</u>				
Spell length				
4-6 months	-0.040	(0.011) ***	-0.040	(0.011) ***
7-10 months	0.001	(0.011)	0.000	(0.011)
11 months or more	0.010	(0.011)	0.011	(0.011)
Had children at baseline	0.011	(0.014)	0.010	(0.014)
Less than high school diploma	0.002	(0.009)	-0.003	(0.010)
Arrested by baseline	-0.038	(0.012) ***	-0.057	(0.019) ***
Arrested and less than high school diploma			0.026	(0.022)
Hispanic	0.006	(0.016)	0.006	(0.016)
Black	0.020	(0.014)	0.019	(0.014)
Age				
19-20 years	-0.003	(0.010)	0.000	(0.010)
21 years or more	-0.042	(0.013) ***	-0.040	(0.014) ***
Local unemployment rate	-0.011	(0.005) **	-0.011	(0.005) **

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up surveys.

NOTES: Also included in each model are variables for site, spell number, months spanning the seam between the two surveys, the year 2000 and after, and missing status for education, children, and prior arrest. Sample weights were used. Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and * = 10 percent. Sample sizes are 8,853 for women and 4,726 for men.

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Table 12
Interactions of Education Level and Arrest on Employment Among Men

	Employment to Nonemployment		Nonemployment to Employment	
Regression 1: Using the local unemployment rate				
Unemployment rate	-0.001	(0.004)	-0.016	(0.007) **
Unemployment rate interacted with less than high school diploma	0.000	(0.000)	0.010	(0.008)
Unemployment rate interacted with arrest	0.011	(0.008)	-0.005	(0.011)
Regression 2: Using "Year 2000 and after"				
Years 2000-2003	-0.003	(0.009)	-0.004	(0.016)
Years 2000-2003 interacted with less than high school diploma	0.014	(0.010)	0.028	(0.017)
Years 2000-2003 interacted with arrest	-0.005	(0.013)	-0.060	(0.021) ***
Sample Size	6936		4726	

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up surveys.

NOTES: Each panel represents a separate regression. Also included in each model are variables listed in Table 11. Sample weights were used. Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and * = 10 percent.

are known to be fairly noisy, which would bias the estimated effects to zero. In addition, since the model uses site dummies as well as a post-2000 dummy, the effects of the unemployment rates are identified using variation within sites in the pre- and post-2000 periods, and much of the variation in the economy appears to be between those periods.

Finally, Table 13 presents models for participants' wages at the current or most recent job. The two models for each gender test whether the wage effects of education, for example, are due to differential sorting by industry and occupation. The first set of columns for women shows that dropouts earned less than graduates, controlling for industry and occupation — although this effect occurred largely for women without children (see the interaction term). For men, those who had children earned more than those without children, and having a previous arrest reduced wages by over 20 percent. In terms of occupation, clerical and "other" jobs paid more for women, while services paid the least for men. Most industries paid men less than construction/manufacturing (the omitted group), and this was particularly true of retail trade.

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Table 13
The Determinants of the Wage at the Current or Most Recent Job:
Ordinary Least Squares Estimates

	Women				Men			
	Coefficient	Standard Error						
Number of months employed through month 30	0.009	(0.002) ***	0.008	(0.002) ***	0.003	(0.002) *	0.002	(0.002)
Less than high school diploma	-0.162	(0.044) ***	-0.123	(0.044) ***	-0.012	(0.045)	0.005	(0.043)
Had children at baseline	0.035	(0.047)	0.037	(0.046)	0.123	(0.056) **	0.104	(0.053) *
Children and less than high school diploma	0.111	(0.061) *	0.105	(0.060) *	--	--	--	--
Arrested by baseline	--	--	--	--	-0.234	(0.097) **	-0.252	(0.094) ***
Arrested and less than high school diploma	--	--	--	--	0.092	(0.117)	0.182	(0.115)
Hispanic	0.201	(0.067) ***	0.213	(0.067) ***	0.083	(0.066)	0.104	(0.062) *
Black	0.118	(0.063) *	0.181	(0.064) ***	0.086	(0.065)	0.120	(0.063) *
Age								
19-20 years	-0.021	(0.035)	0.001	(0.035)	-0.049	(0.044)	-0.010	(0.042)
21 years or more	0.023	(0.045)	0.036	(0.044)	0.043	(0.066)	0.040	(0.062)
Occupation								
Sales (omitted)		--		--		--		--
Clerical			0.080	(0.050)			-0.121	(0.086)
Services			-0.036	(0.050)			-0.181	(0.080) **
Operative/laborer			0.082	(0.071)			-0.081	(0.076)
Other			0.169	(0.056) ***			0.082	(0.078)

(continued)

Table 13 (continued)

	Women				Men			
	Coefficient	Standard Error						
Industry								
Construction/manufacturing (omitted)		--				--		
Retail	-0.002	(0.056)			-0.241	(0.056)	***	
Professional services	0.117	(0.057)	**		0.021	(0.085)		
Other services	0.091	(0.057)			-0.183	(0.058)	***	
Other industry	0.127	(0.065)	**		-0.106	(0.054)	*	
Sample Size	517				331			

SOURCES: MDRC calculations from CET enrollment form and 30-month and 54-month follow-up surveys.

NOTES: Dependent variable is the log(wage). Also included in each model are variables for site and missing status for education, children, and prior arrest. Sample weights were used. Statistical significance levels are indicated as *** = 1 percent; ** = 5 percent; and *=10 percent.

Conclusion

This paper examines the employment outcomes of participants in the Evaluation of the Center for Employment Training (CET) Replication Sites. These young women and men faced factors that are often associated with poor outcomes in the labor market: lack of a high school diploma or GED certificate, having children, and having an arrest record. The findings point to the following conclusions.

- **Youth who did not finish high school or obtain a GED were less successful in the labor market than those who received a high school credential.** Dropouts in this study worked less and earned lower wages than high school graduates and GED recipients, although the difference in wages occurred only among women. Not having a high school credential was particularly problematic for women. Low employment for male dropouts was mostly due to job instability, while low employment for female dropouts was due to both instability and longer spells of nonemployment. Although male dropouts earned comparable wages as high school graduates, their jobs were still of somewhat lower quality. Finally, dropouts were more likely to work in the retail trade industry, and they were less likely to work in professional services.
- **For this group of disadvantaged youth, having children at study entry is not associated with poorer employment outcomes.** Women who had children did not work less or in lower-paying jobs than women without children. In fact, in their most recent jobs, women who had only one child earned the highest wages. For women, the effect of children on employment relates to the interaction of that factor with education level: The negative employment effects of being a dropout are concentrated entirely among the women who had children. Among men, more than half of those who reported having children did not live with these children at study entry. Men who had children worked somewhat more than other men during the follow-up period, and they earned higher wages.
- **Young men who had an arrest record faced substantial challenges in finding a job, much less a good job.** Ex-offenders worked substantially less than men without arrest records, due not to greater job instability but to much longer spells of nonemployment. In other words, it was difficult for these men to find jobs. Moreover, the evidence suggests that ex-offenders' employment status is very responsive to labor market conditions, in that they are the last to find jobs in a slack labor market. Ex-offenders also earn substantially less when they do find jobs. In this study, the men who had arrest re-

offenders earned 21 percent less than nonoffenders, and they were much more likely to work in retail trade, particularly eating/drinking establishments.

The study's results in many cases are similar to earlier findings on youth employment. For example, education level plays an important role in employment outcomes, particularly for young women. The similarity of findings suggests either that this study's sample is not a unique subset of the disadvantaged youth population or that the factors above remain important barriers to work even among a highly motivated group of youth.

The findings confirm the importance of education in the labor market and show that employment stability is a key focal area in helping less educated youth. Also of concern are young female dropouts who have children; this group does especially poorly in the labor market, experiencing greater employment instability, longer spells of joblessness, and lower wages.

The findings also point to the substantial difficulties faced by young men who have arrest records. Even among this study's motivated youth — who sought job training and persisted through the CET application process — ex-offenders' employment rates and wages trailed far behind those of other young men. One implication is that programs should add some type of supported work or guaranteed jobs program for young men with arrest records, so that employment problems can be alleviated early in their careers.

Finally, the findings reinforce the need to help disadvantaged youth find better jobs. One-quarter of the study participants worked in the retail trade industry, and the proportions were even higher among dropouts and men with prior arrests. Programs that serve out-of-school youth need to continue to find ways to provide them with the skills needed to seek out and obtain higher-quality jobs.

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